

ABSTRACT

A high-performance, long-lasting, and inexpensive sheet-type regenerative heat exchanger suitable for a refrigerator for achieving low temperature cooling, and a regenerator or a refrigerator using the same are provided. The sheet-type regenerative heat exchanger includes a very thin sheet-like holding base, and at least one layer of numerous granules such as balls, chips, and fine particles having a relatively uniform particle size bonded to one or both surfaces of the sheet-like holding base. An alignment substrate may be used for bonding the granules in alignment to the sheet-like holding base. Alternatively, numerous minute holes may be drilled in the sheet-like holding base at intermediate positions between adjacent small apertures formed in the alignment substrate, for enhancing gas flow efficiency.